

SEQUENCE LISTING

<110> Reed, Jennifer

<120> RECOMBINANT IL-9 ANTIBODIES AND USES THEREOF

<130> 10271-112-999

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<150> 60/462,259

<151> 2003-04-11

<150> 60/477,797

<151> 2003-06-10

<160> 60

<170> PatentIn version 3.2

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Gly Tyr Thr Phe Thr Gly Tyr Trp Ile Glu
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Glu Ile Leu Pro Gly Ser Gly Thr Thr Asn Tyr Asn Glu Lys Phe Lys
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Ala Asp Tyr Tyr Gly Ser Asp Tyr Val Lys Phe Asp Tyr
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Lys Ala Ser Gln His Val Gly Thr His Val Thr
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Ser Thr Ser Tyr Arg Tyr Ser
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Gln His Phe Tyr Ser Tyr Pro Leu Thr
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Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
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Ser Val Lys Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Gly Tyr Trp
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Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Leu Glu Trp Met Gly Glu
35 40 45

Ile Leu Pro Gly Ser Thr Thr Asn Tyr Asn Glu Lys Phe Lys Gly Arg
50 55 60

Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr Met Glu Leu
65 70 75 80

Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ala
85 90 95

Asp Tyr Tyr Gly Ser Asp Tyr Val Lys Phe Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Ser Ser
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<400> 8

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
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Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln His Val Gly Thr His
 20 25 30

Val Thr Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45

Tyr Ser Thr Ser Tyr Arg Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Tyr Ser Tyr Pro Leu
 85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
 100 105

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<400> 9

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Gly Tyr
 20 25 30

Trp Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45

Gly Glu Trp Leu Pro Gly Ser Gly Thr Thr Asn Tyr Asn Asn Glu Lys
50 55 60

Phe Lys Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ser Thr Ser Thr
65 70 75 80

Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Ala Arg Ala Asp Tyr Tyr Gly Ser Asp Tyr Val Lys Phe Asp
100 105 110

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

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Glu Trp Leu Pro Gly Ser Gly Thr Thr Asn Tyr Asn Glu Lys Phe Lys
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Gly

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<400> 11

Gly Tyr Thr Phe Thr Tyr Tyr Trp Ile Glu
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Ala Asp Tyr Tyr Gly Ser Asp His Val Lys Phe Asp Tyr
1 5 10

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<400> 13

Leu Ala Ser Gln His Val Gly Thr His Val Thr
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<213> Homo sapiens

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Gly Thr Ser Tyr Arg Tyr Ser
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<211> 120

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<213> Homo sapiens

<400> 15

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Tyr Tyr
20 25 30

Trp Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Glu Trp Leu Pro Gly Ser Gly Thr Thr Asn Tyr Asn Glu Lys Phe Lys
50 55 60

Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr Met
65 70 75 80

Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Ala Asp Tyr Tyr Gly Ser Asp His Val Lys Phe Asp Tyr Trp Gly
100 105 110

Gln Thr Leu Val Thr Val Ser Ser
115 120

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<213> Homo sapiens

<400> 16

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Leu Ala Ser Gln His Val Gly Thr His
20 25 30

Val Thr Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Gly Thr Ser Tyr Arg Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Tyr Asp Tyr Pro Leu
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

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Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Gly Tyr
20 25 30

Trp Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Glu Trp Leu Pro Gly Ser Gly Thr Thr Asn Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ala Asp Tyr Tyr Gly Ser Asp His Lys Phe Asp Tyr Trp Gly
 100 105 110

Gln Gly Thr Leu Thr Val Ser Ser
 115 120

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<400> 18

Asp Gln Ile Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
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Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln His Val Gly Thr His
 20 25 30

Val Thr Trp Thr Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu
 35 40 45

Ile Tyr Gly Thr Ser Tyr Arg Tyr Ser Gly Val Pro Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Tyr Glu Tyr Pro Leu
 85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
 100 105

<210> 19
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<400> 19

Gly Gly Thr Phe Ser Gly Tyr Trp Ile Glu
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<210> 20
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 <213> Homo sapiens

<400> 20

Gln Gln Phe Tyr Glu Tyr Pro Leu Thr
1 5

<210> 21

<211> 119

<212> PRT

<213> Homo sapiens

<400> 21

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
1 5 10 15

Ser Val Lys Ser Cys Lys Ala Gly Gly Thr Phe Ser Gly Tyr Trp Ile
20 25 30

Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Glu
35 40 45

Ile Leu Pro Gly Ser Gly Thr Thr Asn Tyr Asn Glu Lys Phe Lys Gly
50 55 60

Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr Met Glu
65 70 75 80

Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
85 90 95

Ala Asp Tyr Tyr Gly Ser Asp Tyr Val Lys Phe Asp Tyr Trp Gly Gln
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 22

<211> 107

<212> PRT

<213> Homo sapiens

<400> 22

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Val Gly Asp
1 5 10 15

Arg Val Thr Ile Thr Cys Lys Ala Ser Gln His Val Gly Thr His Val
20 25 30

Thr Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Lys Leu Leu Ile

35 40 45
 Tyr Ser Thr Ser Tyr Arg Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Phe Tyr Glu Pro Leu Thr
 85 90 95
 Gly Phe Gly Gly Gly Thr Lys Val Ile Glu Lys
 100 105

 <210> 23
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 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Gly Tyr
 20 25 30
 Trp Ile Glu Glu Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45
 Gly Glu Ile Leu Pro Gly Ser Gly Thr Thr Asn Pro Asn Glu Lys Phe
 50 55 60
 Lys Gly Arg Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr Met
 65 70 75 80
 Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala
 85 90 95
 Arg Ala Asp Tyr Tyr Gly Ser Asp Tyr Val Lys Phe Asp Tyr Trp Gly
 100 105 110
 Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 24
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<213> Homo sapiens

<400> 24

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln His Val Gly Thr His
20 25 30

Val Thr Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Ser Thr Ser Tyr Arg Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Tyr Cys Gln Gln Phe Tyr Glu Pro Leu
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

<210> 25

<211> 107

<212> PRT

<213> Homo sapiens

<400> 25

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Ser Gln His Val Gly Thr
20 25 30

His Val Thr Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu
35 40 45

Ile Tyr Gly Thr Ser Tyr Arg Tyr Ser Gly Val Pro Ser Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln
65 70 75 80

Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Phe Tyr Glu Tyr Pro
85 90 95

Leu Thr Phe Gly Gly Gly Thr Val Glu Ile Lys
100 105

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<400> 26

Gly Gly Thr Phe Ser Tyr Tyr Trp Ile Glu
1 5 10

<210> 27
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<213> Homo sapiens

<400> 27

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Tyr Tyr
20 25 30

Trp Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Glu Ile Leu Pro Gly Ser Gly Thr Thr Asn Pro Asn Glu
50 55 60

<210> 28
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<212> PRT
<213> Homo sapiens

<400> 28

Asp Ile Gln Met Met Thr Gln Ser Pro Ser Ser Leu Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln His Val Ile Thr His
20 25 30

Val Thr Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Gly Thr Ser Tyr Ser Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Phe Tyr Glu Tyr Pro Leu
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

<210> 29
<211> 122
<212> PRT
<213> Homo sapiens

<400> 29

Gln Val Gln Leu Val Gln Ser Asx Ala Glu Val Lys Lys Pro Gly Ser
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Gly Tyr
20 25 30

Trp Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Glu Ile Leu Pro Gly Ser Gly Thr Thr Asn Pro Asn Glu Lys Phe
50 55 60

Lys Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ala Asp Tyr Tyr Gly Ser Asp Tyr Val Lys Phe Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

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<212> PRT
<213> Homo sapiens

<400> 30

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly

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Asp Arg Thr	Ile Thr Cys Lys Ala Ser Gln His Val Gly Thr His Val		
	20	25	30
Thr Trp Tyr	Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Gly		
	35	40	45
Thr Ser Tyr	Arg Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly		
	50	55	60
Ser Gly Thr	Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp		
	65	70	75
Phe Ala Thr	Tyr Tyr Cys Gln Gln Phe Tyr Glu Tyr Pro Leu Thr Phe		
	85	90	95
Gly Gly Gly	Thr Lys Val Glu Ile Lys		
	100	105	
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<212> PRT			
<213> Homo sapiens			
<400> 31			
Gln Val Gln	Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser		
1	5	10	15
Ser Val Lys	Lys Pro Gly Ser Ser Val Lys Ser Cys Lys Ala Ser Gly		
	20	25	30
Gly Thr Phe	Ser Tyr Tyr Trp Ile Glu Trp Val Arg Gln Ala Pro Gly		
	35	40	45
Gln Gly Leu	Glu Trp Met Gly Glu Ile Leu Pro Gly Ser Gly Thr Thr		
	50	55	60
Asn Pro His	Glu Lys Phe Lys Gly Arg Val Thr Ile Thr Ala Asp Glu		
	65	70	75
Ser Thr Ser	Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp		
	85	90	95
Thr Ala Val	Tyr Tyr Cys Ala Arg Ala Asp Tyr Tyr Gly Ser Asp Tyr		
	100	105	110

Val Lys Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Ser Ser
 115 120 125

<210> 32
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 32

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln His Val Ile Thr His
 20 25 30

Val Thr Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45

Tyr Gly Thr Ser Tyr Arg Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Phe Tyr Glu Tyr Pro Leu
 85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
 100 105

<210> 33
 <211> 25
 <212> PRT
 <213> Homo sapiens

<400> 33

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser
 20 25

<210> 34
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 <213> Homo sapiens

<400> 34

Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly
 1 5 10

<210> 35
 <211> 32
 <212> PRT
 <213> Homo sapiens

<400> 35

Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr Met Glu
 1 5 10 15

Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 20 25 30

<210> 36
 <211> 11
 <212> PRT
 <213> Homo sapiens

<400> 36

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 1 5 10

<210> 37
 <211> 25
 <212> PRT
 <213> Homo sapiens

<400> 37

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser
 20 25

<210> 38
 <211> 32
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 <213> Homo sapiens

<400> 38

Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr Met Glu
 1 5 10 15

Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 20 25 30

<210> 39
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 <212> PRT
 <213> Homo sapiens

<400> 39

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys
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 <211> 15
 <212> PRT
 <213> Homo sapiens

<400> 40

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr
 1 5 10 15

<210> 41
 <211> 32
 <212> PRT
 <213> Homo sapiens

<400> 41

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
 1 5 10 15

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
 20 25 30

<210> 42
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 <213> Homo sapiens

<400> 42

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
 1 5 10

<210> 43
 <211> 366
 <212> DNA
 <213> Homo sapiens

<400> 43

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cctggacaag ggcttgagtg gatgggagag attttacctg gaagtggtag tactaaccog	180
aatgagaagt tcaagggcag agtcaccatt accgcggacg aatccacgag cacagcctac	240
atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gagagcggat	300
tactacggta gtgattacgt caagtttgac tactggggcc aaggaaccct ggtcaccgtc	360
tcctca	366

<210> 44
 <211> 30
 <212> DNA
 <213> Homo sapiens

<400> 44	
ggaggcacct tcagctatta ctggatagag	30

<210> 45
 <211> 51
 <212> DNA
 <213> Homo sapiens

<400> 45	
gagattttac ctggaagtgg tactactaac ccgaatgaga agttcaaggg c	51

<210> 46
 <211> 39
 <212> DNA
 <213> Homo sapiens

<400> 46	
gcggattact acggtagtga ttacgtcaag tttgactac	39

<210> 47
 <211> 321
 <212> DNA
 <213> Homo sapiens

<400> 47	
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc	60
atcacttgca aggcaagtca gcatgtgatt actcatgtaa cctggatatca gcagaaacca	120
gggaaagccc ctaagctcct gatctatggg acatcctaca gctacagtgg ggtcccatca	180
aggttcagtg gcagtggata tgggacagat ttcactctca ccatcagcag tctgcaacct	240
gaagattttg caacttatta ctgtcagcaa ttttacgagt atcctctcac gttcggcgga	300
gggaccaagg tggagatcaa a	321

<210> 48
 <211> 33
 <212> DNA

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<213> Homo sapiens

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aaggcaagtc agcatgtgat tactcatgta acc 33

<210> 49
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<212> DNA
<213> Homo sapiens

<400> 49
gggacatcct acagc 15

<210> 50
<211> 27
<212> DNA
<213> Homo sapiens

<400> 50
cagcaatttt acgagtatcc tctcacg 27

<210> 51
<211> 591
<212> DNA
<213> Homo sapiens

<400> 51
ccgctgtcaa gatgcttctg gccatgggtcc ttacctctgc cctgctcctg tgetccgtgg 60
caggccaggg gtgtccaacc ttggcgggga tcctggacat caacttcctc atcaacaaga 120
tgcaggaaga tccagcttcc aagtgccact gcagtgctaa tgtgaccagt tgtctctggt 180
tgggcattcc ctctgacaac tgcaccagac catgcttcag tgagagactg tctcagatga 240
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aagtactaaa gaacaacaag tgtccatatt tttcctgtga acagccatgc aaccaaacca 360
cggcaggcaa cgcgctgaca tttctgaaga gtcttctgga aattttccag aaagaaaaga 420
tgagagggat gagaggcaag atatgaagat gaaatattat ttatcctatt tattaaattt 480
aaaaagcttt ctctttaagt tgctacaatt taaaaatcaa gtaagctact ctaaatcagt 540
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<212> PRT
<213> Homo sapiens

<400> 52
Met Leu Leu Ala Met Val Leu Thr Ser Ala Leu Leu Leu Cys Ser Val
1 5 10 15

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Ala Gly Gln Gly Cys Pro Thr Leu Ala Gly Ile Leu Asp Ile Asn Phe
 20 25 30

Leu Ile Asn Lys Met Gln Glu Asp Pro Ala Ser Lys Cys His Cys Ser
 35 40 45

Ala Asn Val Thr Ser Cys Leu Cys Leu Gly Ile Pro Ser Asp Asn Cys
 50 55 60

Thr Arg Pro Cys Phe Ser Glu Arg Leu Ser Gln Met Thr Asn Thr Thr
 65 70 75 80

Met Gln Thr Arg Tyr Pro Leu Ile Phe Ser Arg Val Lys Lys Ser Val
 85 90 95

Glu Val Leu Lys Asn Asn Lys Cys Pro Tyr Phe Ser Cys Glu Gln Pro
 100 105 110

Cys Asn Gln Thr Thr Ala Gly Asn Ala Leu Thr Phe Leu Lys Ser Leu
 115 120 125

Leu Glu Ile Phe Gln Lys Glu Lys Met Arg Gly Met Arg Gly Lys Ile
 130 135 140

<210> 53
 <211> 808
 <212> PRT
 <213> Homo sapiens

<400> 53

Met Ala Glu Leu Leu Ala Ser Ala Gly Ser Ala Cys Ser Trp Asp Phe
 1 5 10 15

Pro Arg Ala Pro Pro Ser Phe Pro Pro Pro Ala Ala Ser Arg Gly Gly
 20 25 30

Leu Gly Gly Thr Arg Ser Phe Arg Pro His Arg Gly Ala Glu Ser Pro
 35 40 45

Arg Pro Gly Arg Asp Arg Asp Gly Val Arg Val Pro Met Ala Ser Ser
 50 55 60

Arg Cys Pro Ala Pro Arg Gly Cys Arg Cys Leu Pro Gly Ala Ser Leu
 65 70 75 80

Ala Trp Leu Gly Thr Val Leu Leu Leu Leu Ala Asp Trp Val Leu Leu

	85		90		95
Arg Thr Ala Leu Pro Arg Ile Phe Ser Leu Leu Val Pro Thr Ala Leu	100		105		110
Pro Leu Leu Arg Val Trp Ala Val Gly Leu Ser Arg Trp Ala Val Leu	115		120		125
Trp Leu Gly Ala Cys Gly Val Leu Arg Ala Thr Val Gly Ser Lys Ser	130		135		140
Glu Asn Ala Gly Ala Gln Gly Trp Leu Ala Ala Leu Lys Pro Leu Ala	145		150		155
					160
Ala Ala Leu Gly Leu Ala Leu Pro Gly Leu Ala Leu Phe Arg Glu Leu	165		170		175
Ile Ser Trp Gly Ala Pro Gly Ser Ala Asp Ser Thr Arg Leu Leu His	180		185		190
Trp Gly Ser His Pro Thr Ala Phe Val Val Ser Tyr Ala Ala Ala Leu	195		200		205
Pro Ala Ala Ala Leu Trp His Lys Leu Gly Ser Leu Trp Val Pro Gly	210		215		220
Gly Gln Gly Gly Ser Gly Asn Pro Val Arg Arg Leu Leu Gly Cys Leu	225		230		235
					240
Gly Ser Glu Thr Arg Arg Leu Ser Leu Phe Leu Val Leu Val Val Leu	245		250		255
Ser Ser Leu Gly Glu Met Ala Ile Pro Phe Phe Thr Gly Arg Leu Thr	260		265		270
Asp Trp Ile Leu Gln Asp Gly Ser Ala Asp Thr Phe Thr Arg Asn Leu	275		280		285
Thr Leu Met Ser Ile Leu Thr Ile Ala Ser Ala Val Leu Glu Phe Val	290		295		300
Gly Asp Gly Ile Tyr Asn Asn Thr Met Gly His Val His Ser His Leu	305		310		315
					320
Gln Gly Glu Val Phe Gly Ala Val Leu Arg Gln Glu Thr Glu Phe Phe	325		330		335

Gln Gln Asn Gln Thr Gly Asn Ile Met Ser Arg Val Thr Glu Asp Thr
340 345 350

Ser Thr Leu Ser Asp Ser Leu Ser Glu Asn Leu Ser Leu Phe Leu Trp
355 360 365

Tyr Leu Val Arg Gly Leu Cys Leu Leu Gly Ile Met Leu Trp Gly Ser
370 375 380

Val Ser Leu Thr Met Val Thr Leu Ile Thr Leu Pro Leu Leu Phe Leu
385 390 395 400

Leu Pro Lys Lys Val Gly Lys Trp Tyr Gln Leu Leu Glu Val Gln Val
405 410 415

Arg Glu Ser Leu Ala Lys Ser Ser Gln Val Ala Ile Glu Ala Leu Ser
420 425 430

Ala Met Pro Thr Val Arg Ser Phe Ala Asn Glu Glu Gly Glu Ala Gln
435 440 445

Lys Phe Arg Glu Lys Leu Gln Glu Ile Lys Thr Leu Asn Gln Lys Glu
450 455 460

Ala Val Ala Tyr Ala Val Asn Ser Trp Thr Thr Ser Ile Ser Gly Met
465 470 475 480

Leu Leu Lys Val Gly Ile Leu Tyr Ile Gly Gly Gln Leu Val Thr Ser
485 490 495

Gly Ala Val Ser Ser Gly Asn Leu Val Thr Phe Val Leu Tyr Gln Met
500 505 510

Gln Phe Thr Gln Ala Val Glu Val Leu Leu Ser Ile Tyr Pro Arg Val
515 520 525

Gln Lys Ala Val Gly Ser Ser Glu Lys Ile Phe Glu Tyr Leu Asp Arg
530 535 540

Thr Pro Arg Cys Pro Pro Ser Gly Leu Leu Thr Pro Leu His Leu Glu
545 550 555 560

Gly Leu Val Gln Phe Gln Asp Val Ser Phe Ala Tyr Pro Asn Arg Pro
565 570 575

Asp Val Leu Val Leu Gln Gly Leu Thr Phe Thr Leu Arg Pro Gly Glu
 580 585 590

Val Thr Ala Leu Val Gly Pro Asn Gly Ser Gly Lys Ser Thr Val Ala
 595 600 605

Ala Leu Leu Gln Asn Leu Tyr Gln Pro Thr Gly Gly Gln Leu Leu Leu
 610 615 620

Asp Gly Lys Pro Leu Pro Gln Tyr Glu His Arg Tyr Leu His Arg Gln
 625 630 635 640

Val Ala Ala Val Gly Gln Glu Pro Gln Val Phe Gly Arg Ser Leu Gln
 645 650 655

Glu Asn Ile Ala Tyr Gly Leu Thr Gln Lys Pro Thr Met Glu Glu Ile
 660 665 670

Thr Ala Ala Ala Val Lys Ser Gly Ala His Ser Phe Ile Ser Gly Leu
 675 680 685

Pro Gln Gly Tyr Asp Thr Glu Val Asp Glu Ala Gly Ser Gln Leu Ser
 690 695 700

Gly Gly Gln Arg Gln Ala Val Ala Leu Ala Arg Ala Leu Ile Arg Lys
 705 710 715 720

Pro Cys Val Leu Ile Leu Asp Asp Ala Thr Ser Ala Leu Asp Ala Asn
 725 730 735

Ser Gln Leu Gln Val Glu Gln Leu Leu Tyr Glu Ser Pro Glu Arg Tyr
 740 745 750

Ser Arg Ser Val Leu Leu Ile Thr Gln His Leu Ser Leu Val Glu Gln
 755 760 765

Ala Asp His Ile Leu Phe Leu Glu Gly Gly Ala Ile Arg Glu Gly Gly
 770 775 780

Thr His Gln Gln Leu Met Glu Lys Lys Gly Cys Tyr Trp Ala Met Val
 785 790 795 800

Gln Ala Pro Ala Asp Ala Pro Glu
 805

<210> 54
 <211> 140
 <212> PRT
 <213> Homo sapiens

<400> 54

Met Val Leu Thr Ser Ala Leu Leu Leu Cys Ser Val Ala Gly Gln Gly
 1 5 10 15

Cys Pro Thr Leu Ala Gly Ile Leu Asp Ile Asn Phe Leu Ile Asn Lys
 20 25 30

Met Gln Glu Asp Pro Ala Ser Lys Cys His Cys Ser Ala Asn Val Thr
 35 40 45

Ser Cys Leu Cys Leu Gly Ile Pro Ser Asp Asn Cys Thr Arg Pro Cys
 50 55 60

Phe Ser Glu Arg Leu Ser Gln Met Thr Asn Thr Thr Met Gln Thr Arg
 65 70 75 80

Tyr Pro Leu Ile Phe Ser Arg Val Lys Lys Ser Val Glu Val Leu Lys
 85 90 95

Asn Asn Lys Cys Pro Tyr Phe Ser Cys Glu Gln Pro Cys Asn Gln Thr
 100 105 110

Thr Ala Gly Asn Ala Leu Thr Phe Leu Lys Ser Leu Leu Glu Ile Phe
 115 120 125

Gln Lys Glu Lys Met Arg Gly Met Arg Gly Lys Ile
 130 135 140

<210> 55
 <211> 2171
 <212> DNA
 <213> Homo sapiens

<400> 55

agcagctctg taatgcgctt gtggtttcag atgtgggagg cctgtgtgaa cctgtcgtgc 60

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gcacccagag atagtgggt gacaaatcac ctccaggtt gggatgcctc agacttgtga 180

tgggactggg cagatgcac tgggaaggct ggaccttga gagtgaggcc ctgagggcag 240

acatgggcac ctggctcctg gcctgcatct gcatctgcac ctgtgtctgc ttgggagtct 300

ctgtcacagg ggaaggacaa gggccaaggt ctagaacctt cacctgcctc accaacaaca 360

ttctcaggat cgattgccac tggctctgccc cagagctggg acagggctcc agcccctggc	420
tcctcttcac cagcaaccag gctcctggcg gcacacataa gtgcatcttg cggggcagtg	480
agtgcaccgt cgtgctgcca cctgaggcag tgctcgtgcc atctgacaat ttcaccatca	540
ctttccacca ctgcatgtct gggaggggagc aggtcagcct ggtggacccg gagtacctgc	600
cccggagaca cgттаagctg gacccgccct ctgacttgca gagcaacatc agttctggcc	660
actgcatacct gacctggagc atcagtcctg ccttgaggcc aatgaccaca cttctcagct	720
atgagctggc cttcaagaag caggaagagg cctgggagca ggcccagcac agggatcaca	780
ttgtcggggg gacctggctt atacttgaag cctttgagct ggaccctggc tttatccatg	840
aggccaggct gcgtgtccag atggccacac tggaggatga tgtggtagag gaggagcgtt	900
atacaggcca gtggagttag tggagccagc ctgtgtgctt ccaggctccc cagagacaag	960
gccctctgat cccaccctgg ggggtggccag gcaacaccct tgttgctgtg tccatctttc	1020
tcctgctgac tggcccgacc tacctcctgt tcaagctgtc gcccagggtg aagagaatct	1080
tctaccagaa cgtgccctct ccagcgatgt tcttccagcc cctctacagt gtacacaatg	1140
ggaacttcca gacttggtatg ggggcccacg gggccgggtg gctgttgagc caggactgtg	1200
ctggcacccc acagggagcc ttggagccct gcgtccagga ggccactgca ctgctcactt	1260
gtggcccagc gcgtccttgg aaatctgtgg ccctggagga ggaacaggag ggccctggga	1320
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tctaggtccc tgactcgcca gatgcatcat gtccattttg ggaaaatgga ctgaagtttc	1800
tggagccctt gtctgagact gaacctcctg agaagggggc cctagcagcg gtcagaggtc	1860
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cagcctctac cctcagcatc ctggccacaa gttcttctt ccattgtccc ttttctttat	1980
ccctgacctc tctgagaagt ggggtgtggt ctctcagctg ttctgccctc ataccttaa	2040
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aaaaaaaaa a	2171

<210> 56
 <211> 2175
 <212> DNA
 <213> Homo sapiens

<400> 56
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 gcacccagag atagttgggt gacaaatcac ctccaggttg gggatgcctc agacttgtga 180
 tgggactggg cagatgcata tgggaagtaa ctgctgcaag aacggacaga cactgctgca 240
 gagaacttgc cagggtgttt catgctgtgg ctgggtgggtc caggctgcac gctccattct 300
 aggaaagggg ccctcagccc agtcccttgc aggctggacc ttggagagtg aggccctgag 360
 gcgagacatg ggcacctggc tcttggcctg catctgcata tgcacctgtg tctgcttggg 420
 agtctctgtc acaggggaag gacaagggcc aaggtctaga accttcacct gcctcaccaa 480
 caacattctc aggatcgatt gccactggtc tgccccagag ctgggacagg gctccagccc 540
 ctggctcctc ttcaccaggc tcttggcggc acacataagt gcatcttgcg gggcagttag 600
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 aacacacaga gctctggggc catcccagcc ctggcctgtg gcctttcttg tgaccatcag 1620

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ctctctgtgc cttactgagg cacctttcta gagattaaaa ggggcttgat ggctgttaaa	2160
aaaaaaaaaa aaaaa	2175

<210> 57
 <211> 1451
 <212> DNA
 <213> Homo sapiens

<400> 57	
gaagagcaag cgccatgttg aagccatcat taccattcac atccctctta ttctgcagc	60
tgccctgct gggagtgggg ctgaacacga caattctgac gcccaatggg aatgaagaca	120
ccacagctga tttcttctg accactatgc cactgactc cctcagtgtt tccactctgc	180
ccctcccaga gggtcagtgt tttgtgttca atgtcgagta catgaattgc acttggaaaca	240
gcagctctga gcccagcct accaacctca ctctgcatta ttggtacaag aactcggata	300
atgataaagt ccagaagtgc agccactatc tattctctga agaaatcact tctggctgtc	360
agttgcaaaa aaaggagatc cacctctacc aaacatttgt tggtcagctc caggaccac	420
gggaaccag gagacaggcc acacagatgc taaaactgca gaatctgggtg atccctggg	480
ctccagagaa cctaacactt cacaaactga gtgaatccca gctagaactg aactggaaca	540
acagattctt gaaccactgt ttggagcact tgggtcagta ccggactgac tgggaccaca	600
gctggactga acaatcagtg gattatagac ataagttctc cttgcctagt gtggatgggc	660
agaaacgcta cacgtttcgt gttcggagcc gctttaacct actctgtgga agtgctcagc	720
attggagtga atggagccac ccaatccact gggggagcaa tacttcaaaa gagaatcctt	780
tcctgtttgc attggaagcc gtggttatct ctgttggctc catgggattg attatcagcc	840
ttctctgtgt gtatttctgg ctggaacgga cgatgccccg aattcccacc ctgaagaacc	900
tagaggatct tgttactgaa taccacggga acttttcggc ctggagtggg gtgtctaagg	960
gactggctga gagtctgcag ccagactaca gtgaacgact ctgcctcgtc agtgagattc	1020

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ccccaaaagg agggggccctt ggggaggggc ctggggcctc cccatgcaac cagcatagcc 1080
cctactgggc cccccatgt tacaccctaa agcctgaaac ctgaacccca atcctctgac 1140
agaagaaccc cagggctctg tagccctaag tggtaactaac tttccttcat tcaaccacc 1200
tgcgtctcat actcaactca cccactgtg gctgatttgg aattttgtgc ccccatgtaa 1260
gcacccttc atttggcatt cccacttga gaattaccct tttgccccga acatgttttt 1320
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ccttctcttt tccatctacc ctccgattgt tctgaaccg atgagaaata aagtttctgt 1440
tgataatcat c 1451

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<210> 58
<211> 521
<212> PRT
<213> Homo sapiens

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<400> 58

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Met Gly Leu Gly Arg Cys Ile Trp Glu Gly Trp Thr Leu Glu Ser Glu
1           5           10           15

```

```

Ala Leu Arg Arg Asp Met Gly Thr Trp Leu Leu Ala Cys Ile Cys Ile
          20           25           30

```

```

Cys Thr Cys Val Cys Leu Gly Val Ser Val Thr Gly Glu Gly Gln Gly
          35           40           45

```

```

Pro Arg Ser Arg Thr Phe Thr Cys Leu Thr Asn Asn Ile Leu Arg Ile
          50           55           60

```

```

Asp Cys His Trp Ser Ala Pro Glu Leu Gly Gln Gly Ser Ser Pro Trp
65           70           75           80

```

```

Leu Leu Phe Thr Ser Asn Gln Ala Pro Gly Gly Thr His Lys Cys Ile
          85           90           95

```

```

Leu Arg Gly Ser Glu Cys Thr Val Val Leu Pro Pro Glu Ala Val Leu
          100          105          110

```

```

Val Pro Ser Asp Asn Phe Thr Ile Thr Phe His His Cys Met Ser Gly
          115          120          125

```

```

Arg Glu Gln Val Ser Leu Val Asp Pro Glu Tyr Leu Pro Arg Arg His
          130          135          140

```

Val Lys Leu Asp Pro Pro Ser Asp Leu Gln Ser Asn Ile Ser Ser Gly
145 150 155 160
His Cys Ile Leu Thr Trp Ser Ile Ser Pro Ala Leu Glu Pro Met Thr
165 170 175
Thr Leu Leu Ser Tyr Glu Leu Ala Phe Lys Lys Gln Glu Glu Ala Trp
180 185 190
Glu Gln Ala Gln His Arg Asp His Ile Val Gly Val Thr Trp Leu Ile
195 200 205
Leu Glu Ala Phe Glu Leu Asp Pro Gly Phe Ile His Glu Ala Arg Leu
210 215 220
Arg Val Gln Met Ala Thr Leu Glu Asp Asp Val Val Glu Glu Glu Arg
225 230 235 240
Tyr Thr Gly Gln Trp Ser Glu Trp Ser Gln Pro Val Cys Phe Gln Ala
245 250 255
Pro Gln Arg Gln Gly Pro Leu Ile Pro Pro Trp Gly Trp Pro Gly Asn
260 265 270
Thr Leu Val Ala Val Ser Ile Phe Leu Leu Leu Thr Gly Pro Thr Tyr
275 280 285
Leu Leu Phe Lys Leu Ser Pro Arg Val Lys Arg Ile Phe Tyr Gln Asn
290 295 300
Val Pro Ser Pro Ala Met Phe Phe Gln Pro Leu Tyr Ser Val His Asn
305 310 315 320
Gly Asn Phe Gln Thr Trp Met Gly Ala His Gly Ala Gly Val Leu Leu
325 330 335
Ser Gln Asp Cys Ala Gly Thr Pro Gln Gly Ala Leu Glu Pro Cys Val
340 345 350
Gln Glu Ala Thr Ala Leu Leu Thr Cys Gly Pro Ala Arg Pro Trp Lys
355 360 365
Ser Val Ala Leu Glu Glu Glu Gln Glu Gly Pro Gly Thr Arg Leu Pro
370 375 380
Gly Asn Leu Ser Ser Glu Asp Val Leu Pro Ala Gly Cys Thr Glu Trp

385 390 395 400
 Arg Val Gln Thr Leu Ala Tyr Leu Pro Gln Glu Asp Trp Ala Pro Thr
 405 410 415
 Ser Leu Thr Arg Pro Ala Pro Pro Asp Ser Glu Gly Ser Arg Ser Ser
 420 425 430
 Ser Ser Ser Ser Ser Ser Asn Asn Asn Asn Tyr Cys Ala Leu Gly Cys
 435 440 445
 Tyr Gly Gly Trp His Leu Ser Ala Leu Pro Gly Asn Thr Gln Ser Ser
 450 455 460
 Gly Pro Ile Pro Ala Leu Ala Cys Gly Leu Ser Cys Asp His Gln Gly
 465 470 475 480
 Leu Glu Thr Gln Gln Gly Val Ala Trp Val Leu Ala Gly His Cys Gln
 485 490 495
 Arg Pro Gly Leu His Glu Asp Leu Gln Gly Met Leu Leu Pro Ser Val
 500 505 510
 Leu Ser Lys Ala Arg Ser Trp Thr Phe
 515 520

 <210> 59
 <211> 332
 <212> PRT
 <213> Homo sapiens

 <400> 59
 Met His Leu Gly Ser Asn Cys Cys Lys Asn Gly Gln Thr Leu Leu Gln
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 Arg Thr Cys His Gly Val Ser Cys Cys Gly Trp Trp Phe Gln Ala Ala
 20 25 30

 Arg Ser Ile Leu Gly Lys Gly Pro Ser Ala Gln Ser Leu Ala Gly Trp
 35 40 45

 Thr Leu Glu Ser Glu Ala Leu Arg Arg Asp Met Gly Thr Trp Leu Leu
 50 55 60

 Ala Cys Ile Cys Ile Cys Thr Cys Val Cys Leu Gly Val Ser Val Thr
 65 70 75 80

Gly Glu Gly Gln Gly Pro Arg Ser Arg Thr Phe Thr Cys Leu Thr Asn
 85 90 95

Asn Ile Leu Arg Ile Asp Cys His Trp Ser Ala Pro Glu Leu Gly Gln
 100 105 110

Gly Ser Ser Pro Trp Leu Leu Phe Thr Arg Leu Leu Ala Ala His Ile
 115 120 125

Ser Ala Ser Cys Gly Ala Val Ser Ala Pro Ser Cys Cys His Leu Arg
 130 135 140

Gln Cys Ser Cys His Leu Thr Ile Ser Pro Ser Leu Ser Thr Thr Ala
 145 150 155 160

Cys Leu Gly Gly Ser Arg Ser Ala Trp Trp Thr Arg Ser Thr Cys Pro
 165 170 175

Gly Asp Thr Ser Asn Ile Ser Ser Gly His Cys Ile Leu Thr Trp Ser
 180 185 190

Ile Ser Pro Ala Leu Glu Pro Met Thr Thr Leu Leu Ser Tyr Glu Leu
 195 200 205

Ala Phe Lys Lys Gln Glu Glu Ala Trp Glu Gln Ala Gln His Arg Asp
 210 215 220

His Ile Val Gly Val Thr Trp Leu Ile Leu Glu Ala Phe Glu Leu Asp
 225 230 235 240

Pro Gly Phe Ile His Glu Ala Arg Leu Arg Val Gln Met Ala Thr Leu
 245 250 255

Glu Asp Asp Val Val Glu Glu Glu Arg Tyr Thr Gly Gln Trp Ser Glu
 260 265 270

Trp Ser Gln Pro Val Cys Phe Gln Ala Pro Gln Arg Gln Gly Pro Leu
 275 280 285

Ile Pro Pro Trp Gly Trp Pro Gly Asn Thr Leu Val Ala Val Ser Ile
 290 295 300

Phe Leu Leu Leu Thr Gly Pro Thr Tyr Leu Leu Phe Lys Leu Ser Pro
 305 310 315 320

Arg Leu Gly Trp Gly Pro Thr Gly Pro Val Cys Cys
 325 330

<210> 60
 <211> 369
 <212> PRT
 <213> Homo sapiens

<400> 60

Met Leu Lys Pro Ser Leu Pro Phe Thr Ser Leu Leu Phe Leu Gln Leu
 1 5 10 15

Pro Leu Leu Gly Val Gly Leu Asn Thr Thr Ile Leu Thr Pro Asn Gly
 20 25 30

Asn Glu Asp Thr Thr Ala Asp Phe Phe Leu Thr Thr Met Pro Thr Asp
 35 40 45

Ser Leu Ser Val Ser Thr Leu Pro Leu Pro Glu Val Gln Cys Phe Val
 50 55 60

Phe Asn Val Glu Tyr Met Asn Cys Thr Trp Asn Ser Ser Ser Glu Pro
 65 70 75 80

Gln Pro Thr Asn Leu Thr Leu His Tyr Trp Tyr Lys Asn Ser Asp Asn
 85 90 95

Asp Lys Val Gln Lys Cys Ser His Tyr Leu Phe Ser Glu Glu Ile Thr
 100 105 110

Ser Gly Cys Gln Leu Gln Lys Lys Glu Ile His Leu Tyr Gln Thr Phe
 115 120 125

Val Val Gln Leu Gln Asp Pro Arg Glu Pro Arg Arg Gln Ala Thr Gln
 130 135 140

Met Leu Lys Leu Gln Asn Leu Val Ile Pro Trp Ala Pro Glu Asn Leu
 145 150 155 160

Thr Leu His Lys Leu Ser Glu Ser Gln Leu Glu Leu Asn Trp Asn Asn
 165 170 175

Arg Phe Leu Asn His Cys Leu Glu His Leu Val Gln Tyr Arg Thr Asp
 180 185 190

Trp Asp His Ser Trp Thr Glu Gln Ser Val Asp Tyr Arg His Lys Phe
 195 200 205

Ser Leu Pro Ser Val Asp Gly Gln Lys Arg Tyr Thr Phe Arg Val Arg
 210 215 220

Ser Arg Phe Asn Pro Leu Cys Gly Ser Ala Gln His Trp Ser Glu Trp
 225 230 235 240

Ser His Pro Ile His Trp Gly Ser Asn Thr Ser Lys Glu Asn Pro Phe
 245 250 255

Leu Phe Ala Leu Glu Ala Val Val Ile Ser Val Gly Ser Met Gly Leu
 260 265 270

Ile Ile Ser Leu Leu Cys Val Tyr Phe Trp Leu Glu Arg Thr Met Pro
 275 280 285

Arg Ile Pro Thr Leu Lys Asn Leu Glu Asp Leu Val Thr Glu Tyr His
 290 295 300

Gly Asn Phe Ser Ala Trp Ser Gly Val Ser Lys Gly Leu Ala Glu Ser
 305 310 315 320

Leu Gln Pro Asp Tyr Ser Glu Arg Leu Cys Leu Val Ser Glu Ile Pro
 325 330 335

Pro Lys Gly Gly Ala Leu Gly Glu Gly Pro Gly Ala Ser Pro Cys Asn
 340 345 350

Gln His Ser Pro Tyr Trp Ala Pro Pro Cys Tyr Thr Leu Lys Pro Glu
 355 360 365

Thr